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The following table, from Mulhall's "Progress of the World," 1880, is interesting :—

WATER SUPPLY OF SOME ENGLISH AND FOREIGN CITIES.

City.	Million Gallons Daily.	Gallons per Inhabitant.	Cost of Works. £	Cost per Inhabitant in Shillings.
London .....	121	28	8,888,000	44
New York .....	48	48	2,500,000	50
Paris .....	34	16	2,100,000	40
Glasgow.....	26	48	1,550,000	60
Manchester .....	11	25	1,320,000	60
Liverpool .....	11	24	1,650,000	72
Boston (U.S.) .....	10	50	600,000	60
Dublin .....	7	24	610,000	37
Hamburg .....	5	22	170,000	15
Edinburgh .....	5	22	510,000	40

In an article on Croton Water, by W. E. Rideing, in *Scribner's Magazine* for October, 1877, the following figures are given in reference to the New York Water Supply. (The article is fully illustrated, and is very interesting.)

Daily supply, 104,000,000 gallons—100 gallons to each inhabitant.

The storage capacity is as follows :—

Fifth Avenue Reservoir .....	20,000,000 gallons.
Central Park " .....	38,000,000 "
" " (the new one) .....	1,000,000,000 "
Boyd's Corner Dam (303 acres) .....	3,369,000,000 "
A total of.....	4,427,000,000 "

**Exhibition Rats.**—A writer in the *Newcastle Daily Chronicle*, says: "There is no harm now in mentioning the fact that amongst the visitors to the late Newcastle Exhibition were a tremendous number of rats, which fixed their abode there, and have resolutely refused to leave, even now that the place is closed to the public. Where they all came from goodness knows, but they have turned up in large numbers at many parts of the building as the men have been removing the exhibits, and their suspected presence led, on Friday last, to an exciting hunt in the North Gardens. A special ratcatcher was there with several assistants, and the game of annihilation commenced at eleven in the forenoon and was not suspended until about seven at night. There was rare and exciting sport, and the old familiar school rhyme of "see how they run" might have been sung by the company in all truth. Scores of rats were discovered underneath the flooring of a building in the gardens, whilst beneath the remains of the Indo-Chinese Café quite a swarm was unearthed, much to the delight, doubtless, of a smart terrier dog, who seemed to revel in the fun that was before him, while those who had laid nets for the capture of the rodents were simply in ecstasies. With an instinct characteristic of them, the rats had made their abode principally underneath the boards of the buildings where eatables were sold, and there, while visitors were revelling in the enjoyment of pork pies, sausage rolls, and penny buns, they enjoyed, it may be presumed, many a feast from the crumbs that fell from the rich men's tables. It has gone hard with the Exhibition rats since the palace on the Moor was closed; it will go still harder with them when the time for demolition of the building and the restoration of the grounds has arrived. Already, indeed, as Friday's proceedings prove, the era of the extirpation has set in."

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## THE ARABS IN CENTRAL AFRICA.—(*See Maps.*)

By MR. JAMES STEVENSON, F.R.S.E., F.R.G.S.

[This address was prepared by Mr. Stevenson for delivery at the Conference (May 18th, 1888), and 250 copies were kindly given to the Society for use at that meeting. Mr. Stevenson has allowed the Society to use his Map, from which the small one is constructed. He has also given the Society the Map in the Journal illustrating this paper.]

THE recent attacks by Arabs at the north end of Lake Nyassa have excited a strong feeling in this country, and it is a fitting time to call the attention of the public to the great Arab invasion of Central Africa, which threatens to destroy the industrial population of the continent.

In 1871 Livingstone found himself confronted by Arabs in various parts, and especially at Nyangwe he witnessed the commencement of a system of wholesale massacre. From this point in particular the tribes around were attacked. In a map published in 1883 I showed the extent to which these ravages had extended, along with the other regions throughout Central Africa in which slave-hunting had been destroying the population more or less.

During the last five years the information that has come to hand shows that the ravages of the Zanzibar Arabs have extended in area and intensity amongst some of the most advanced races of the interior, so that countries lying west of the great lakes have been destroyed over an area of one thousand miles in length by four hundred in breadth. The devastation extends as far as to the countries where the population was previously thinned by the West Coast slave trade, so that there is a near approach to the time when the nations of Europe may find that there is but a very small industrial population remaining in these parts.

*Proceedings of the Royal Geographical Society*, 1887, p. 640.—Dr. Wolf says of Lunda, &c. (see map): "The country from the coast to the Kassai is thinly populated, though all the villages I passed through showed a great number of healthy-looking children. This will be understood if we remember that this region has for centuries provided Angola and the foreign market with slaves."

From the central regions slaves have recently been drawn to fill up the blanks created by earlier slave raids near the East Coast, but the source of supply is coming to an end, both from

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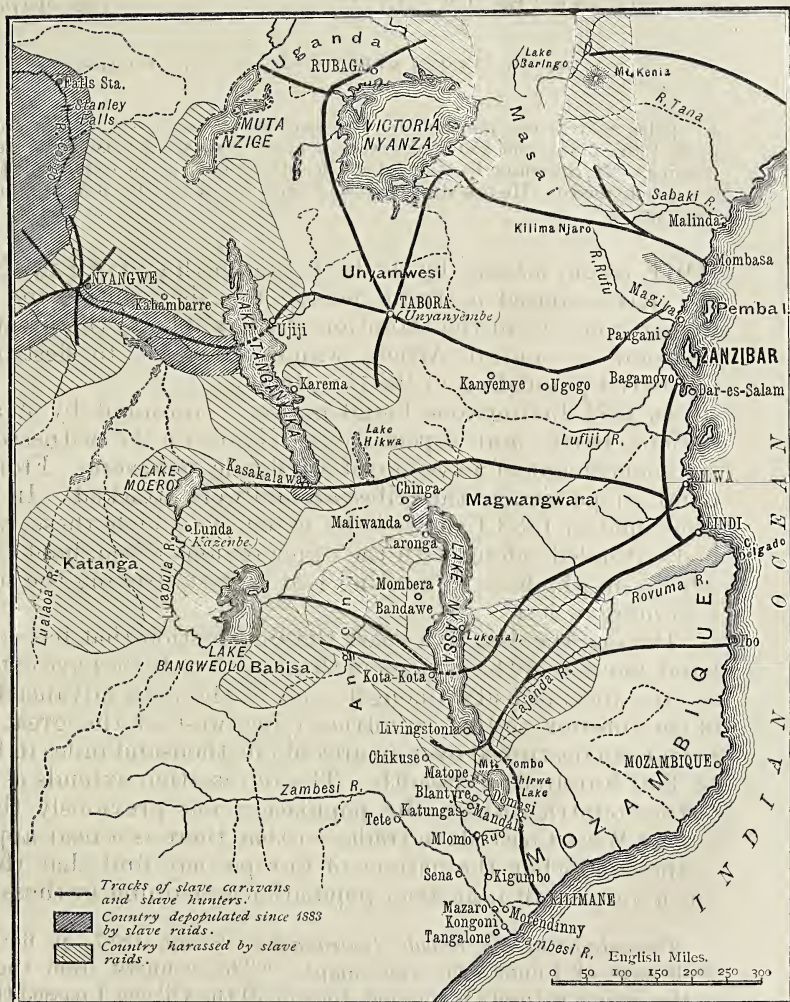




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Map to illustrate Mr. Stevenson's address on "The Arabs in Africa" and the Nyassa Conference.  
 Printed for the Journal of the Manchester Geographical Society.



The following are the names of the persons who have been appointed to the various committees of the Board of Directors of the American Red Cross, for the year 1917-1918.

The Board of Directors consists of the following members:

President: Mr. [Name]  
Vice-President: Mr. [Name]  
Secretary: Mr. [Name]  
Treasurer: Mr. [Name]

The committees are as follows:

Committee on Finance: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Publicity: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Education: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Medical Supplies: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Hospital Construction: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Blood: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Nursing: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Food: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Clothing: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Shelter: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Transportation: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].  
Committee on Miscellaneous: Mr. [Name], Chairman; Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name], Mr. [Name].

the exhaustion of the centre and quite recently from the Arabs having in a few places begun to cultivate by slave labour the lands from which the inhabitants had been expelled.

Referring to the maps, I quote information from the various travellers who have, within the last five years, been witnesses of what has been going on. In order to give a general idea of what passes, I begin by quoting passages descriptive of the scenes which accompany the ravages of the country about Stanley Falls.

*The Congo and the Founding of its Free State.* By H. M. Stanley (Vol. II., p. 140).—"Our guide, Yumbila, was told to question them as to what was the cause of this dismal scene, and an old man stood out and poured forth his tale of grief and woe with an exceeding volubility. He told of a sudden and unexpected invasion of their village by a host of leaping, yelling men in the darkness, who dinned their ears with murderous fusilades, slaughtering their people as they sprang out of their burning huts into the light of the flames. Not a third of the men had escaped; the larger number of the women and children had been captured and taken away, they knew not whither. . . ."

P. 144.—"We discovered that this horde of banditti—for in reality and without disguise they were nothing else—was under the leadership of several chiefs, but principally under Karema and Kibunga. They had started sixteen months previously from Wane-Kirundu, about thirty miles below Vinya Njara. For eleven months the band had been raiding successfully between the Congo and the Lubiranzi, on the left bank. They had then undertaken to perform the same cruel work between the Biyerré and Wane-Kirundu. On looking at my map I find that such a territory within the area described would cover superficially 16,200 square geographical miles on the left bank, and 10,500 miles on the right, all of which in statute mileage would be equal to 34,700 square miles, just 2,000 square miles greater than the island of Ireland, inhabited by about 1,000,000 people.

"The band when it set out from Kirundu numbered 300 fighting men, armed with flint locks, double-barrelled percussion guns, and a few breech-loaders; their followers, or domestic slaves and women, doubled this force. . . . Within the enclosure was a series of low sheds extending many lines deep from the immediate edge of the clay bank inland, 100 yards; in length the camp was about 300 yards. At the landing place below were 54 long canoes, varying in carrying capacity. Each might convey from 10 to 100 people. . . . The first general impressions are that the camp is much too densely peopled for comfort. There are rows upon rows of dark nakedness, relieved here and there by the white dresses of the captors. There are lines or groups of naked forms—upright, standing, or moving about listlessly; naked bodies are stretched under the sheds in all positions; naked legs innumerable are seen in the perspective of prostrate sleepers; there are countless naked children—many mere infants—forms of boyhood and girlhood, and occasionally a drove of absolutely naked old women bending under a basket of fuel, or cassava tubers, or bananas, who are driven through the moving groups by two or three musketeers. On paying more attention to details,



I observe that mostly all are fettered; youths with iron rings around their necks, through which a chain, like one of our boat anchor chains, is rove, securing the captives by twenties. The children over ten are secured by these copper rings, each ringed leg brought together by the central ring, which accounts for the apparent listlessness of movement I observed on first coming in presence of this curious scene. The mothers are secured by shorter chains, around whom their respective progeny of infants are grouped, hiding the cruel iron links that fall in loops or festoons on their mammas' breasts. There is not an adult man captive amongst them. . . .

P. 148.—“The slave traders admit they have only 2,300 captives in this fold, yet they have raided through the length and breadth of a country larger than Ireland, bringing fire and spreading carnage with lead and iron. Both banks of the river show that 118 villages and 43 districts have been devastated, out of which is only educed this scanty profit of 2,300 females and children, and about 2,000 tusks of ivory! The spears, swords, bows, and the quivers of arrows show that many adults have fallen. Given that 118 villages were peopled only by 1,000 each, we have only a profit of 2 per cent, and by the time all these captives have been subjected to the accidents of the river voyage to Kirundu and Nyangwe, of camp life and its harsh miseries, to the havoc of smallpox, and the pests which miseries breed, there will only remain a scant 1 per cent upon the bloody venture.

“They tell me, however, that the convoys already arrived at Nyangwe with slaves captured in the interior have been as great as their present band. Five expeditions have come and gone with their booty of ivory and slaves, and these five expeditions have now completely weeded the large territory described above. If each expedition has been as successful as this the slave-traders have been enabled to obtain 5,000 women and children safe to Nyangwe, Kirundu, and Vibondo, above the Stanley Falls. This 5,000 out of an annual million will be at the rate of a half per cent, or five slaves out of 1,000 people. . . . This is poor profit out of such large waste of life, for originally we assume the slaves to have mustered about 10,000 in number. To obtain the 2,300 slaves out of the 118 villages they must have shot a round number of 2,500 people, while 1,300 men died by the wayside through scant provisions and the intensity of their hopeless wretchedness. How many are wounded and die in the forest or droop to death through an overwhelming sense of their calamities we do not know; but if the above figures are trustworthy, then the outcome from the territory with its million of souls is 5,000 slaves, obtained at the cruel expense of 33,000 lives! And such slaves! They are females or young children who cannot run away, or who with youthful indifference will soon forget the terrors of their capture! Yet each of the very smallest infants has cost the life of a father, and perhaps his three stout brothers and three grown-up daughters. An entire family of six souls have been done to death to obtain that small, feeble, useless child! These are my thoughts as I look upon the horrible scene. Every second during which I regard them the clink of fetters and chains strikes upon my ears. My eyes catch sight of that continual lifting of the hand to ease the neck in the collar, or as it displays a manacle, exposed through a muscle being irritated by its weight or want of fitness. My nerves are offended with the rancid effluvium of the unwashed herds



within this human kennel. The smell of other abominations annoy me in that vitiated atmosphere. For how could poor people, bound and riveted together by twenties, do otherwise than wallow in filth ! Only the old women are taken out to forage. They dig out the cassava tubers and search for the banana ; while the guard, with musket ready, keenly watches for the coming of the revengeful native. Not much food can be procured in this manner, and what is obtained is flung down in a heap before each gang to at once cause an unseemly scramble. Many of these poor things have been already months fettered in this manner, and their bones stand out in bold relief in the attenuated skin, which hangs down in thin wrinkles and puckers. And yet who can withstand the feeling of pity so powerfully pleaded for by those large eyes and sunken cheeks ? ”

This sufficiently describes the general situation. Coming south of the great forest belt we have the following notices of observations made by recent German travellers to the east and west of Nyangwe, in two of the richest and best peopled regions of the continent, which have been wholly destroyed, and also in a district south of Nyangwe, where the process was beginning.

Mr. Wissmann in 1881 came through the country of the Basonge, in the very heart of the continent, about the 5th parallel, south latitude, and says :—

“ They lived in beautiful villages, miles in length, cultivated the land, and excelled in the manufacture of cloth, pottery, iron articles, and wood carving. To the east of these tribes, however, I found that, in consequence of a recent inroad of the Arabs of Nyangwe, the villages had been deserted. The Basonge have never yet seen an Arab, nor heard the report of a gun, but I am afraid their fate is sealed.”

On his second journey—

*Proceedings of the Royal Geographical Society*, 1887, p. 776.—“ From the 28th December, 1886, to the 23rd January, 1887, the caravan marched through the region of the gigantic villages met with on the first journey. Now the district was entirely depopulated. War and smallpox had entirely devastated the country. The want of food was so great that Wissmann lost 80 men from hunger and smallpox on the journey from the Sankuru to Nyangwe. In the latter place he found conditions also very much changed, in consequence of the events at Stanley Falls. The bearing of the Arabs towards the traveller was decidedly hostile.”

*Proceedings of the Royal Geographical Society*, 1887, p. 221.—“ Dr. Lenz left Kasonge on June 30th, and traversing the plateau between that and Tanganyika, reached Mr. Hore’s station on Kavala Island on August 7th. He found much of the route studded with recently-founded Zanzibar villages established by the Arab traders, the natives having been compelled to retreat into the forests and remote mountains ”

*Proceedings of the Royal Geographical Society*, 1887, p. 190.—“ Ujiji was entered on August 15th. Here Dr. Lenz discovered that on account

of the warlike raids of the Arabs and the excitement in Uganda, it would be impossible for him to push northwards to Emin Pasha, as was his original intention."

*Proceedings of the Royal Geographical Society*, 1887, p. 643.—Dr. Ludwig Wolff says (1886, February): "Between Katshitsh and the Batondoi, I met the powerful chief Zappu Zapp, who as a slave hunter is the curse of the country between the Lubilash and the Lomami. Nearly all his men were armed with percussion guns, which he gets at Nyangwe from the Arabs, in exchange for slaves and ivory. The other tribes are still armed with bows and arrows. This was the furthest point to the west whence the trade all goes to Zanzibar. Several of Zappu Zapp's men, also his sons, spoke the Swahili language. Zappu Zapp wanted guns and powder from me. He did not care for anything else. When I refused to accept his slaves and ivory he resolved to take the 'En Avant' by force overnight."

*Proceedings of the Royal Geographical Society*, 1887, p. 776.—"Wissman found that in the region between the Lomami and the Sankuru the conditions of trade have completely altered since 1884. Now glass beads, arms, and powder form the chief articles of barter, having replaced the earlier cowry shells."

One state, that of Rua, seemed to be holding out; but to the south of it, in the rich mining region of Katanga, we have these notices by Reichard, a German, and Capello and Ivens, Portuguese travellers.

*Proceedings of the Royal Geographical Society*, 1885, p. 606.—"On October 27th they (Dr. Böhm and Herr Reichard) crossed into the kingdom of a powerful chief named Msiri, who had been waging a war against Urua during the last six years, in the course of which he had advanced as far as the Kikondia Lake. He was even then 'in the field' beleaguering a town named Katapena, and it was there the explorers joined him on January 20th, 1884. . . . When Msiri at length returned to his capital (Kimpatu, in U-nkea), it became evident that he aimed at the travellers' destruction. Tired of interminable delays, Herr Reichard at length started on September 25th with 'colours flying and drums beating.' A hundred and fifty natives who sought to prevent his passage of the Lufira were easily put to flight, but thenceforth his progress became a continual struggle against cold, wet, and hunger."

*Proceedings of the Royal Geographical Society*, 1887, p. 318.—Capello and Ivens "were now within the limits of the empire which Msiri, a native of Unyamwezi (called Ukalaganja, or Garaganza, by the western tribes), has carved himself out of the ancient dominions of the Kazembe, and which extends from Lake Kikonja and Urua in the north to the Mushinga Mountains in the south, and from the Lualaba eastward to the Luapula. This vast region is by no means devoid of natural wealth, but it has been depopulated by war, and the traveller sometimes spends days on the march without encountering a single human being. . . . The 'Kimpata' of Msiri, in the district of Bunkea, is approached



through a perfect labyrinth of narrow lanes, planted with euphorbias, and decorated at intervals with trophies of human skulls, every one of which has a history attached to it, proclaiming the detestable cruelty of this parvenu among African rulers. Permission to proceed to Kazembe's town, or even to visit the western shore of Lake Moero, having been refused, on the ground of the unsettled state of the country, Captain Ivens rejoined his companion at Ntenke's, and they resolved to make their way to the Luapula."

We are now well down to the region west of Lake Nyassa. Of the country north of Lake Bangweolo we have from Reichard and Giraud a harrowing picture of desolation. Giraud also tells that it is the boast of the people of Bemba, among whom it may be remembered that Livingstone encountered the first Arabs who had penetrated to the centre of Africa, that they had exterminated the Babisa. This was an important tribe, who sometimes traded as far as the East Coast of Africa, but have latterly been carried thither in captivity by way of the ferries of Nyassa by the Arabs of Kota Kota. Coming nearer the scene of the late disturbances, we have the following description by Mr. Moir, of the African Lakes Company, of the destruction of a people whom the London Missionary Society had hoped to evangelise.

*Scottish Geographical Magazine*, April, 1885, p. 110.—Paper by F. M. Moir.—"Within 20 miles of this station, while we were on our march from Nyassa to Tanganyika, the fertile valley of the Lofu was the scene of a terrible slave raid. An Arab, Kabunda, who had been settled there for about ten years, having many houses and slaves, determined to go to Zanzibar with his ivory. So he picked a quarrel with Katimbwe, the chief, and took all his cattle; then organized a sudden raid throughout all the valley, and every man, woman, and child who could be found was seized and tied up. Very few managed to escape him or his keen hunters, and a caravan was made up for the coast; but the smiling valley that had been known as the Garden of the Tanganyika, from its fertility and the industry of its people, now silent and desolate, was added to that already long stretch of hungry wilderness through which we had passed. . . . To deal with, so far (Kabunda) was the polished gentleman. He told us he was going on next morning, and would pass our tents; his caravan was about 3,000 strong, two detachments had gone by a road to the back of us, as could be seen by the tracks in the grass. Accordingly, we were up betimes to see them pass.

"First came armed men, dancing, gesticulating, and throwing about their guns, as only Arabs can do, to the sound of drums, panpipes, and other less musical instruments. Then followed, slowly and sedately, the great man himself, accompanied by his brother and other head men, his richly caparisoned donkey walking along near by; and surely no greater contrast could be conceived than that between this courteous, white-robed Arab, with his gold-embroidered joho, silver sword and daggers, and silken turban, and the miserable swarm of naked squalid human beings



that he had wantonly dragged from their now ruined homes in order to enrich himself.

"Behind the Arab came groups of wives and household servants, laughing and talking as they passed along, carrying the camp utensils and other impedimenta of their masters. After that the main rabble of the caravan, the men armed with guns, spears, and axes. Ominously prominent among the loads were many slave sticks, to be handy if any turned refractory or if any likely stranger were met. Mingling with and guarded by them, came the wretched, over-burdened, tied-up slaves. The men who might still have had spirit to try and escape were driven, tied two-and-two, in the terrible goree or taming stick, or in gangs of about a dozen, each with an iron collar let into a long iron chain, many even so soon after the start staggering under their loads.

"And the women! I can hardly trust myself to think or speak of them—they were fastened to chains or thick bark ropes; very many, in addition to their heavy weight of grain or ivory, carried little brown babies, dear to their hearts as a white man's child to his. The double burden was almost too much, and still they struggled wearily on, knowing too well that when they showed signs of fatigue, not the slaver's ivory, but the living child would be torn from them and thrown aside to die. One poor old woman I could not help noticing. She was carrying a biggish boy who should have been walking, but whose thin weak legs had evidently given way. She was tottering already; it was the supreme effort of a mother's love—and all in vain; for the child, easily recognizable, was brought into camp a couple of hours later by one of my hunters, who had found him on the path. We had him cared for; but his poor mother would never know. Already, during the three days' journey from Liendwe, death had been freeing the captives. It was well for them; still we could not help shuddering, as, in the darkness, we heard the howl of the hyenas along the track, and realized only too fully the reason why. Low as these poor negroes may be in the moral scale, they have still strong maternal affection, and love of home and country."

For ninety miles along the south coast of Tanganyika we have the entire population swept away, and in the adjoining fertile country of Fipa the Arabs are now in great force.

During the last year letters from the Mission Stations expressed apprehensions, on account of the presence near Lake Nyassa of the Arab Kabunda, of whose doings at Lake Tanganyika Mr. Moir's description has been given. The Arab traders had congregated in greater numbers at the Nyassa end of the road, on account of the small steamer of the African Lakes Company having been for some time detained on account of disturbances near Bandawe. The killing first of one chief, and then when by the mediation of the agent of the Company no reprisals were made, the killing of another, indicated a desire to find an excuse for seizing the villagers to carry their ivory to the coast. The reprisals on the women belonging to the Arabs furnished a colourable pretext for the seizure of the fifteen hundred, who were afterwards rescued by the defenders of Karonga.

Another motive is indicated in the following extract from the letter of the Rev. Mr. Scott, of Manchester, to the *Manchester Guardian* :—

*Manchester Guardian*, Feb. 25, 1888.—From a letter of the Rev. Mr. Scott.—“It is impossible to tell with accuracy the number that have been carried off by Arabs as slaves, but a large number of women and children are known to be in their hands. That the fate of the majority of the former was not one of slavery only we have too much reason to fear. Lest it should be thought that I exaggerate, I will tell your readers that the leader of this ruffianly band, a Belooch from Zanzibar, had the blackguard audacity to inform the Rev. J. A. Bain, M.A., and Mr. Monteith, in an interview they had with him before the massacre, what would be done with the ‘young Wa-Nkonde girls,’ accompanying his atrocious statement with the foulest language. And there is no doubt that most were abandoned to the Ruga-ruga and other ruffians who formed his force, whose only pay consists in uncontrolled licence of this kind, with a very small proportion of the booty captured.”

The question is now fully brought before us—Are the atrocities of the Arab invasion now to be extended to Lake Nyassa? At various points besides the north end the invaders are ready, and have been tentatively adding to their old station at Kota Kota one near the Bandawe Mission, and besides Losewa and Makanjira's they have been aggressive near Blantyre. The Rev. Mr. Scott, head of the Blantyre Mission, in regard to this district says: “The Arab slave trade is making frightful progress. Caravans of Arabs are pouring in—for trade? No! Hardly a bale of cloth goes up country from the East Coast. It is guns and powder—not even spirits. It is simply slaughter, and slaughter of thousands, and the desolation of the fairest lands—lands where the natives were at peace, where industry and thrift and happiness ruled; where to get through one village you might start in the early morning and not pass out of it till the sun was half-way down, journeying straight on; and these are now desolate. Fresh routes are opening up to them, and the desolation is spreading. It is not slave trade; it is ruthless massacre of the most barbarous type. There is actually a new Arab village near the south end of Lake Nyassa.”

On the other hand, the forces in favour of order, if properly used, are much stronger on Lake Nyassa, and can be readily augmented.

For the purposes of defence, the coasts of Lake Nyassa are within easy reach. The steamers of the Company would set down reinforcements within three weeks after leaving the East Coast, and in favourable circumstances, for they pass rapidly through the malarious district, and the land journey past the rapids is over high and healthy land.

There are thus no physical difficulties, but only those which arise from the present action of Portugal.



The following quotations show the position twelve years ago\* :—

REMARKS ON MATTERS CONNECTED WITH THE APPROACH  
BY THE ZAMBEZI TO NYASSA, REQUIRING THE ATTEN-  
TION OF GOVERNMENT.

When the Scottish missions proceeded to occupy the Shiré Valley and Lake Nyassa, arrangements were proposed that their communications should be kept up by their employing vessels to enter the Kongone or Luabo mouths of the Zambezi from the ocean, and by smaller vessels on the rivers to connect that navigation with that of the steamer placed on Lake Nyassa. The original discovery and navigation of these river communications by agents of the British Government seems clearly made out in Livingstone's "Missionary Travels," pp. 640 and 665, "Zambezi," pp. 16, 91. The only exception is about 30 miles of the Zambezi navigation from Mazaro to the entrance to the Shiré, which is also part of the line of water communication between the Portuguese settlements of Quillimane, Mazaro, Senna, and Tette.

The carrying out of this intention was deferred in consequence of the receipt of a letter from Senhor Zagury, intimating that he had had conceded to him by the Portuguese Government the exclusive right of steam navigation between Quillimane, the Luabo mouth of the Zambezi, and Tette. The missions have since used the Portuguese approach by the Quillimane river, which connects itself by a portage of six miles with the Zambezi at Mazaro. That this concession of the Portuguese Government would have been, if carried out, an invasion of British rights hardly admits of doubt, although it was not the part of the mission to contest the matter. But the concession was probably hastily granted, when the passage of the British steamer *Ilala* attracted attention, with the view of keeping the question open, and it is understood to be now withdrawn.

The Portuguese route from Quillimane to Tette above mentioned, as we have said, coincides for 30 miles with the new route from the mouth of the Zambezi to Nyassa, but the Portuguese are very much in the position of a power that has been withdrawing from it, which came about in this way.

The high price of slaves in Brazil, 40 years ago, induced a pretty general sale of the agricultural population connected with their settlements, destroying both their defensive power and their revenues. The Landeens, part of the great Abantu or Zulu Kaffir race, which now occupies most of Eastern Africa from the Cape to within five degrees of the equator, have gradually, in the last 30 years, driven them from the south bank of the river. The town of Senna is secured by the payment to the Landeens of an annual tribute or land tax, enforced in case of refusal by occupation and slaughter of the inhabitants. (Livingstone's "Missionary Travels," p. 658 ; "Zambezi," p. 152 ; Fritsch, "Eing. Sud. Africas," p. 494.) The Livingstone Search Expedition found the inhabitants, in 1867, living on the islands of the Zambezi, in consequence of 600 persons

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\* From "The Civilisation of South-Eastern Africa." By James Stevenson.



having been killed the previous year on account of this and other provocations. The party in the Ilala also found that, in November, 1874, the Landeens had occupied Mazaro, on the north bank, with a slaughter of 200 people, when enforcing the payment of their land tax there. As they also levy dues on the river, and the Portuguese Government has not seen its way during thirty years to prevent their thus treating the whites as a conquered tribe, it would appear to be necessary to consider the position of this race as well as that of the Portuguese in any settlement. The concession of transit duties might be made to the Portuguese on condition of the river from Mazaro to the Shiré being kept open, a task which, judging from British experience of the Kaffirs in South Africa, may involve difficulty and expense. With the Landeens between the mouth of the Zambezi and Mazaro we presume we must deal ourselves.

The next steps were these. In 1877 the revised Portuguese tariff for Mozambique and the East Coast of Africa was issued. This contained the two following clauses:—

“Art. 70. The transit of merchandise from places outside the provinces, and destined by land or water transit for foreign places adjoining Portuguese territory on the north or south, and also for countries situated beyond the confluence of the rivers Shiré and Zambezi, is permitted through the Custom Houses mentioned in Art. 11 on payment of a sole duty of 3 per cent *ad valorem*.”

“The Custom Houses mentioned in Art. 11 are Cabo Delgado, Mozambique, Angoche, Quillimane, Sofala, Inhambane, and Laureço Marques.”

“Art. 84. The taxes of 3 and 1 per cent *ad valorem* which have been collected in the Custom Houses of Mozambique for public works are extinct, the administration being expressly prohibited from reviving these taxes or fixing any other new ones on imports or exports.”

A custom house, in addition to the ports mentioned, was established at the confluence of the Zambezi and Shiré. The present African Lakes Company was accordingly formed, and a steamer was sent out in due course.

The Portuguese have also been active on the south side of the Zambezi in suppressing the Landeens, the native race who occupied so important a position in 1876. This has been done by forces drawn from the other native races, who have been supplied with arms and have acted under leaders generally half-castes. The emigrants from Portugal to the province of Mozambique form hardly an element in the population at present. The revenues of the province have not been equal to the strain upon them, which has been a good deal felt among the official class. This may account for the freedom with which arms and ammunition have recently been sold to the Arabs at Quillimane, and no doubt some revenue as well as profit has been obtained. But, from the remarks of the Rev.

Mr. Scott, quoted above, it would appear that the immediate result is that these banditti are ruining the country just behind the province, which will return into the state of primeval forest when the population is destroyed. It is also worthy of consideration that the abundant supply of arms to this part of the country will probably precipitate the Arab attack upon the middle Zambezi and its tributary the Kafue, which lies next to the country ravaged by Msiri on the other side of the Machinga range. The African Lakes Company, who have steadily refused to sell guns or ammunition to the Arabs, have cause to complain that their peaceable operations should be compromised in this way. The Missions also are placed in circumstances unfavourable to them.

The company had fully equipped itself for conducting its affairs on a more important scale, when the recent block of the rivers occurred. The new river steamer of the company is a stern wheeler, intended to carry 75 tons on a moderate draft. They have also a steamer of considerable size in course of being put together on Lake Nyassa.

It may be added that the company and the missions have expended altogether some £150,000. In pursuance of similar objects a survey was obtained and a road made for about forty-six miles through the rough country north-west of Lake Nyassa, towards Lake Tanganyika, which is reached from that point through an easy country. The road was made by native labour, and the traffic on it was at first worked by parties hired by the company from the tribes Nkonde, Wanda, and Mambwe, with all of whom the company made treaties by which its authority was recognised over these districts, but it was almost inevitable that the management should slip into the easier way of letting the Arabs purchase goods at the Nyassa terminus, and convey them by their own people, often slaves, to Tanganyika, the European staff being too limited in numbers to superintend all the stations required.

The international importance of this route has been indicated by almost all the recent explorers of the central regions, Giraud, Lenz, Wissmann, having returned from the Congo Free State this way. If the block on the road between the lakes continues this will be no longer possible, and an important part of Central Africa will be practically closed to Europeans, whereas, if it were kept open, there would be little danger of obstruction on either of the great inland seas, which are more favourably situated in this respect than either railways from the East Coast or narrow rivers from the West. A glance at the map shows it to be one of the most important routes in Africa, strategically considered. The elevation above the sea level probably renders it more healthy for Europeans than Arabs, and its possession gives ready access to the centre of the Arab position on the continent.



Although the training of the natives to industrial pursuits is a slow process, yet there are tribes like the Wa-Nkonde, who in their own way are an industrious and intelligent people, numbering about 30,000. They rescued the party besieged at Karonga, and some of them might be effectively organized for the defence of the country, and well led would no doubt keep the road to Tanganyika clear.

The Angone, the Zulu race on the plateau west of Lake Nyassa, recently defeated the Bemba warriors, who co-operate with the Arabs in destroying their neighbours. There are also remnants of races, such as the Bisas, who have found a place of refuge on the islands of Lake Bangweolo, who would probably be of use in any serious attempt to restore order in the country.

The company has paid all its expenses, but has been almost deprived of dividends by the fact that the Portuguese have for several years demanded higher duties than they were entitled to charge according to their own tariff. When these present difficulties are overcome the company ought to be placed on a more extended basis. This would, no doubt, be agreeable to the Portuguese in respect of yielding larger transit duties. It would also enable the company to be of still greater use in respect of the important objects to be accomplished in Africa.

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## APPENDIX TO MR. STEVENSON'S PAPER.

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CORRESPONDENCE PUBLISHED BY PERMISSION OF H.M.  
SECRETARY OF STATE FOR FOREIGN AFFAIRS.

*To the RIGHT HONOURABLE THE MARQUIS OF SALISBURY, K.G., H.M.  
Secretary of State for Foreign Affairs.*

MY LORD MARQUIS,—While the subject of the continuance of the Mozambique tariff is before your Lordship, I beg to submit some circumstances which preceded the formation of the African Lakes Company, which may indicate that the Company is entitled to special consideration by the Portuguese Government.

Soon after the missions were established on Lake Nyassa, it appeared that a concession of the exclusive right of navigating by steam the rivers Zambezi and Shiré had been offered to one Zagury, a Portuguese subject settled in Liverpool, provided that within three years he had fulfilled the conditions of navigation required, the concession being for a term of thirty years.

As one of the conditions was that the steamer should ascend the Shiré into Lake Nyassa, which was impossible on account of the cataracts, nothing could come of this. But in October, 1876, the Cortes appointed a commission\* to inquire into the position of the colony. They seem to

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\* Appointed by the King, the Report approved by the Cortes.



have derived a good deal of information from some papers on the subject I had been led to circulate during 1876.

When the report of the Committee came before the Cortes, Viscount Duprat, their Consul-General in London, applied for six copies of these papers to be forwarded to Lisbon for the use of his Government. Some time afterwards he sent me a translation of a document indicating the general lines of the proposed tariff. Subsequently I received from Lisbon the text of the tariff with two passages marked, of which translations were attached as in the margin.

Translations sent: "Art. 70. The transit of merchandise from places outside the province, and destined, by land or water carriage, for foreign places adjoining Portuguese territory on the north and south, and also for countries situated beyond the confluence of the rivers Shiré and Zambezi, is permitted through the Custom Houses mentioned in Article 11, on payment of a sole duty amounting to 3 % *ad valorem*.

"Art. 84. The taxes of 3 and 1 % *ad valorem*, which have been collected in the Custom Houses of Mozambique for public works are extinct, the administration being expressly prohibited from reviving these taxes, or fixing any other new ones on imports or exports."

The communications during the previous years had been so bad (at one time as much as eight months having passed without hearing from Nyassa) that there was serious thought of withdrawing the mission, but there was now what appeared to be an invitation on the part of the Portuguese that the friends of the mission should undertake the traffic under the following circumstances:—

First. That the Portuguese Government were perfectly aware of the views they entertained; secondly, that the confluence of the Zambezi and Shiré was fixed as a limit beyond which they would not be interfered with; thirdly, that the last clause of Article 84 amounted to an honourable understanding that no unfavourable changes would be made.

The Company was accordingly formed, and a steamer was sent out in the following year. During the last ten years the Company has been gradually developed, and notwithstanding the very great difficulties which surround the commencement of such an enterprise, would have moderately remunerated its shareholders, had not the Portuguese set aside the transit duty.

Recently the increasing requirements of the district have necessitated the sending out of larger steamers.

I trust your Lordship's representations will prove to the Portuguese Government that the practical confiscation of these steamers, and the destroying of the position of the Company, is a course that cannot be honourably or justifiably pursued.

I have the honour to be, &c., &c.,

(Signed) JAS. STEVENSON,

*Chairman of the African Lakes Company.*

LARGS, March 30th, 1888.

I beg to enclose a copy of the pamphlets\* referred to, and also of the papers sent me by Consul-General Duprat.

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\* Of which an extract is given at p. 80.

Paper sent me by CONSUL-GENERAL DUPRAT.

PORTUGAL'S AFRICAN COLONIES.

"The Government, after duly considering the recent development that has taken place in Africa, and with a view of enabling our Colonies to accompany the onward movement in the march of progress, and occupy the prominent place that of right belongs to them, has established a new tariff of customs at Mozambique, the result of which will, of course, be to attract commerce to that province, and open all ports to national as well as foreign trade. The decree also permits commerce to be carried on along the coast under a foreign flag.

"The new tariff of customs duties for the province of Mozambique is as follows :—

IMPORT DUTIES.

	Reis.
Butter, European or Indian, per kil.....	80
Gunpowder .....	100
Guns, gun barrels, and revolvers .....	500
Hoes .....	60
Liquors, distilled, per litre .....	90
Liquors, fermented .....	20
Metals, unwrought or wrought, 6 per cent <i>ad valorem</i> , excepting iron.	
Molasses, per litre.....	90
Oil, olive .....	20
Pistols, each .....	500
Ships (new or seaworthy), to be registered as Portuguese vessels, 5 per cent <i>ad valorem</i> .	
Vessels (condemned as unseaworthy) to be sold, 4 per cent <i>ad valorem</i> .	
Sugar, per kil. ....	30
Tea, per kil. ....	60
Tobacco, unmanufactured .....	200
Tobacco (manufactured), cigars .....	600
Tobacco, other lots .....	400
Wine, in barrels or bottles, per litre .....	40
Woollens, cotton, raw white, including handkerchiefs, per kil.....	90
Woollens, cotton, stamped, dyed .....	60
Woollens, open or transparent, such as lace, silk, &c., 10 per cent <i>ad valorem</i> .	
All other goods not enumerated, duty free.	

EXPORT DUTIES.

Cowrie shells .....	4 per cent. <i>ad valorem</i> .
Gums.....	2 ditto
Indiarubber .....	4 ditto
Ivory .....	6 ditto
Orchilla weed .....	1 ditto
Seeds of all kinds .....	1 ditto
Skins and hides .....	2 ditto
Wax .....	4 ditto

All other articles not enumerated, duty free.

"This decree was favourably received by all the Portuguese press, and is generally considered as an essential basis for the future development of the province of Mozambique.

"Article 70 of the new Mozambique customs tariff.—The transit through the Custom Houses, mentioned in Article 11, of merchandise coming from places outside the province, and destined, either by land or water, for foreign countries bordering on the north and south of Portuguese territories, is permitted, and also merchandise for places situated beyond the point of confluence of the Shire and Zambezi, on payment of a sole duty of 3 per cent *ad valorem*."

LARGE, *April 5th*, 1888.

MY LORD MARQUIS,—In describing the circumstances under which the African Lakes Company was established, I omitted to call your Lordship's attention to the arrangements that were made subsequent to the issue of the Portuguese copy of the new Mozambique tariff. In this document certain Custom Houses, which with the coast between them are opened to foreign flags, are detailed, viz., Cabo Delgado, Mozambique, Angoche, Quillimane, Sofala, Imhambane, and Lourenco Marques. But as none of the Custom Houses were convenient for the transit trade to Lake Nyassa, it was arranged by Her Majesty's Government with that of Portugal, that an additional Custom House should be established at the confluence of the Zambezi and the Shiré. During the last ten years the Company has always used the British flag, as it was entitled to do, in trading to this as to the other Custom Houses.

I have the honour to remain, &amp;c., &amp;c.,

JAMES STEVENSON.

*April 9th*, 1888.

DEAR SIR,—I am directed by the Marquis of Salisbury to acknowledge the receipt of your letter, and in reply his Lordship desires me to address to you his thanks for sending him so interesting a memorandum on the subject of the African Lakes Company, and also the book on the civilisation of South-Eastern Africa.

I remain, dear sir, faithfully yours,

(Signed) SYDNEY GREVILLE.

James Stevenson, Esq.

An exceptionally interesting contribution to the coral reefs controversy, which has lately been raging between the Duke of Argyll, Professor Huxley, the president of the Geological Society, and Dr. Guppy, from the pen of Captain Wharton, hydrographer to the navy, appears in *Nature*. Captain Wharton offers evidence from the China Sea which supports the opinion that Darwin was wrong in assuming that subsidence plays a principal part in the production of barrier reefs and atolls, and at the same time modifies one part of the opposing explanation offered by Mr. Murray. The most curious part of Captain Wharton's article, however, is that bearing on the evidence which has been considered sufficient to justify a generalisation accepted as established almost beyond dispute by geological authorities. "In the Pacific," observes Captain Wharton, "the vast majority of islands have been merely sketched, without a single sounding having been taken, either inside or outside lagoons. I append a few statistics relating to the larger coral groups to show our position in this respect, merely remarking that the waters of the Fiji and the Society Islands are the only ones which can be said to be in any sense surveyed :—

	No. of Islands.	No. Surveyed.
Paumotu Islands.....	74	1 partially.
Ellice Islands .....	10	None.
Gilbert Islands .....	16	None.
Marshall Islands.....	30	None.
Caroline Islands .....	43	3 partially.
Tonga Islands .....	6 groups	2 groups partially."—

*Manchester Guardian.*



## NOTES ON THE NYASSA REGION OF EAST AFRICA.

*(See Map facing page 72.)*

By MR. HENRY E. O'NEILL, H.M. Consul for Portuguese East African Possessions.  
Gold Medallist of the Royal Geographical Society, London, &c., &c.  
Corresponding Member of the Manchester Geographical Society.

[Read to the Members in the Library, Wednesday, June 13th, 1888.]

JUST a month has passed since my return to Mozambique, after carrying out a journey to Lake Nyassa. Some of the chief incidents of that journey, such as the attack made upon us by Arabs at Karonga, have already reached you from other sources; but it may interest your readers to hear of something more than the fighting at Karonga, and to learn if, out of that mêlée, we have secured any geographical or other useful result.

A main object I had in view in undertaking that journey was to discover something of the possibilities of an extension of legitimate trade along the line of country divided by the Nyassa and Shiré waterways. I also hoped to collect fuller and more reliable evidence upon the state of the slave trade—respecting which reports of a great increase have reached England—than I could possibly do whilst stuck upon a small islet off the coast, and, as this subject is of very general interest, I may also tell you something of it.

My travelling companion was the Rev. Lawrence Scott, of Denton, Manchester, and to him, I think, we shall owe some of the best results of our journey, for he is a keen botanist, and has taken home with him a collection of from 600 to 800 species of plants. Many of these, we hope, will be altogether new, and some may be of economical value. Before this reaches home his collection will be in the hands of the experts at Kew, and we may soon expect some report upon it.

For my own part I did not like to lose the opportunity a visit to Lake Nyassa gave me of testing the longitude commonly given to it, and I provided myself before starting with two of the best chronometers I could procure for this purpose. Although all the results have not yet been worked out, I think I may say I have secured a good line of longitudes from Quillimane, up the Zambezi and Shiré rivers, and extending to the north end of Lake Nyassa. They will make one or two important corrections in positions about the Lower Zambezi, and the observations I secured on the western and southern shores of Lake Nyassa will, I think, be bound to shift the western shore of the lake from 6' to 8' to the eastward.

I am myself well satisfied that the whole lake should be transferred that distance to the eastward, for all my observations point to the excellence of the survey the late Mr. James Stewart, C.E., made of it so far as the relative positions of its leading points go. No very appreciable error exists, I believe, in his survey of the whole lake, which in great part he carefully triangulated, but the lake will have to go over our maps bodily to the eastward the distance I have named. I do not, of course, ask you to accept this change of position of a great African lake until the value of the observations I have made has been tested by experts and made public.

Stewart's error in the longitude he gave to the lake is easily and naturally accounted for. Having fixed, as he doubtless hoped correctly, the longitude of Blantyre Mission Station, he used that place as his base, deducing from the longitude he himself assigned to it the error on Greenwich mean time of the chronometer used by him on a later journey to fix the longitude of Lake Nyassa. I believe the chronometer used by him for this purpose was a good one, and its rate was certainly carefully watched. The longitudes, therefore, fixed by him on the lake are relatively good, and are only so far incorrect as the longitude of his base is incorrect. That point I have found, by lunars in 1884 and by chronometers in 1887, to be about 7' further to the east than he has placed it, and, therefore, by this same amount will all the positions fixed by him on the lake have to be shifted to the eastward.

So much for the scientific results of my late journey. A few specimens of rocks were also collected, which Professor Prestwich has kindly consented to examine; but they are far too few to enable him to say much upon the geology of the country.

I am not going to linger in these notes over any detailed description of our journey up the Zambezi and Shire rivers, or tell of our pleasant stay at the Scotch settlements of Mandala and Blantyre, on the invigorating Shire highlands, or of the voyage by steamer of nearly 700 miles over the clear broad sweep of the waters of Lake Nyassa. And I have promised not to delay you by any further description of our troubles at the north end of the lake, to which I see the *Manchester Guardian* has treated you very fully. I will not do more then, than, in passing, add my testimony to the truth and accuracy of those accounts, whose writers show a satisfactory breadth and comprehensiveness of view in African affairs. What I will try to do, in the space this paper allots me, is to discuss the region I have lately visited from the point of view of its commercial prospects, an aspect that will interest many of your readers, and of which I notice little has been said.



The region of the Central African Lakes is, to the general reader of African literature, a land given up to the Mohammedan slave-dealer and the Christian missionary; a happy hunting ground for the former, in the density and weakness, through want of union, in its native population, and in one sense also for the latter, in its freedom from the average European trader, with whose disregard to temperance principles, in his dealing with the blacks, the missionary is bound to clash. For let me at once make it understood, that European trade in the region of the central lakes, Nyassa and Tanganyika, has been carried on under a most exceptional and admirable rule. Being, as yet, wholly in the hands of a company, whose directors are mostly wealthy philanthropists, spirituous liquors of all kinds have been rigidly excluded from their stock-in-trade. Hence we have the very unusual spectacle of a country in which, though Europeans have settled in it, and the British trader has worked in it for over twelve years, the brandy bottle is not seen, and rum and gin are words yet unknown to the natives. Is it possible that trade can belie the experience and traditions of European commerce in primitive countries and prosper under such conditions? This is a curious question, and the answer is of vital importance to those who would in Africa develop, with due regard to the welfare of the African, and you will agree that all praise and support is due to those who are striving to solve it satisfactorily.

But, first, we must learn something of the nature and prospects of the trade, and of the possibilities of an extension of commerce in this country. Take a map of Lake Nyassa, and let us gain an idea of the native races that surround it. In every direction around the lake we find a fairly dense population. Passing up from the south, the Shiré valley, from the confluence of the Ruo river to a little distance from the outlet of the lake, is thickly peopled by the so-called Makololo, who are really the remnants of the Manganja gathered up into something like union and strength under the Makololo followers of Livingstone. One of these, Ramakukan or Kasisi, is now recognised as the paramount head of the natives peopling the Shiré valley, and his rule extends eastwards upon the Shiré highlands to the Scotch stations of Blantyre and Mandala.

Upon the south-west of the lake you will meet with a powerful section of the Angoni or Zulu tribe, with which there has been a large incorporation of the original Wa-Nyassa or lake-shore dwellers; but by a strict observance of Zulu customs, arms, and dress, they still retain, under the despotic rule of Tchikusi, most of the characteristics of the Zulu tribe.

Again, further north, and upon the high land a little distance from the lake, we find another great section of the Zulu people, the Angoni, or Mangoni as they are sometimes called, under the



great chief Mombera. A large tribe, the Atonga, formerly held this country, and still preserve their independence at several points along the lake shore, but the mass of them appear to have been "eaten up," and entering the conquering tribe have intermixed with them and adopted the habits of their conquerors. The tribe you see marked as the Atambuka, along the rich Rikuru valley, are, I learn, but a section of the Atonga, subject now to the Angoni of Mombera, and in course of being assimilated by them. Only the presence of the missionaries of the Free Church of Scotland on the western shore of the lake, and at Mombera's headquarters on the highlands, has saved the whole Atonga tribe from a similar absorption.

Northward still of this, and inhabiting the rich country that slopes up from the north-west extremity of the lake to the water-parting between Lakes Nyassa and Tanganyika, are the Wa-Nkonde and the Wam-Wamba, natives less superstitious, more industrious and peacefully inclined, than those we have just glanced at, and who possess, in the opinion of those who have lived amongst and observed them, many qualities fitting them before most East and Central African tribes for contact with the European and the reception of civilised teaching. These, with the Wa-Suku, who occupy the higher country behind them, are the inhabitants of the district marked on most maps as the Konde country—a country described in the brightest colours by Capt. Elton, and by others who, like the Rev. Alex. Bain, M.A., have had even better opportunities of observing it. It is especially rich in cattle, sheep, and goats; and I should mention here that cattle are abundant on all the highlands west of the lake peopled by the Angoni, whose habits are more pastoral than agricultural.

Rounding the northern extremity of the lake we came upon the Mangwangwara or Mavite, as they are known upon the coast, who claim also to descend from Zulu ancestry, and who certainly show in their predatory habits, and in their retention of the Zulu head-dress and arms, some former connection with that tribe. But the extent of their migrations, and the regular observance of the Zulu rule to conquer and incorporate every weaker neighbour, has so destroyed their individuality as a tribe, and led to so great an infusion of other dialects into their tongue, that they are now but a huge mixture, resembling the Zulu, pure only in their love of war and in passive submission to the despotism of their chief. Their warlike habits are a curse to the country between north-east Nyassa and the coast. So near to the sea did they approach in 1882 that they overran the Universities mission station of Masasi, and on another occasion swept the country bare to the seashore fronting the Portuguese settlement of Ibo. The next year an army of them fought their way up the Lujenda valley, and were only stopped in their

southward course by the sharp resistance of the natives on the northern slopes of Zomba. But, though given to devastating adjoining countries, they are amongst themselves united and strong, and furnish a great population for the highlands north-east of Nyassa.

We have now nearly passed round the whole lake. Upon the south-east shores to which we have just come, you will find no great paramount chief or one tribe strong in numbers. This is due to the Arabs who prevail here, and whose policy it is to break up and weaken, rather than to unite and strengthen, and who hold minor Wa Nyassa and Ajawa chiefs, such as Makanjila, Mponda, and Mataka, better in hand by so doing. Naturally Arab influence in this district is strong, for it is the terminal point, on Lake Nyassa, of the celebrated Lujenda valley slave route to the Zanzibar ports of Kilwa and Lindi. The slaves are, however, now obtained from far west of the Nyassa, and the country on its south-east shore is fairly well peopled with small communities, subject to a number of petty chiefs, besides the three I have named.

In the midst of the hills and plateaux that support the somewhat heterogeneous mass of tribes and peoples I have enumerated, Lake Nyassa lies embosomed, giving ready access to them all by the easy secure navigation of its deep, shoalless waters. If you ask me for an estimate of the numbers with which this noble waterway places you within such easy touch, I can only reply by a guess; but I shall not, I think, be far wrong if I say that—drawn a line parallel to the lake shore and at every point 50 miles distant from it—the numbers peopling that surrounding belt will exceed one million.

Now, knowing something of the people, their numbers, and the means of communication with them, we are in a better position to discuss the question I assume you, or some manufacturing magnate, to have asked me, “What are the prospects of an extension of commerce in that country? Is there a demand for goods of British manufacture?” I reply, unhesitatingly, “Yes, but hopes must not be indulged in of a large immediate demand, or for a demand, at the present, for any goods but those of the simplest character.”

So diverse and contradictory are the opinions expressed by African travellers and others, to whom home merchants generally turn for knowledge and advice on this question of African markets for home manufactures, that I can well understand the perplexity and hesitation and fear that exists regarding them. That a demand, and that an imperfectly satisfied one, exists in the country of which we are speaking, I can convince you, I think, without difficulty.

A few weeks before I reached Bandawe, the headquarters of the Free Church Mission on the lake shore, a great meeting



had been held by Mombera and his councillors, or "Indunas," to which Dr. Laws had been invited. One of the objects of this meeting was to press the whole Missions to come up and dwell with them on the highlands. "You live with the Atonga, and they, our enemies and slaves, are clothed and are getting rich," said the chief. "The calico you have brought and distributed in their country would cover a road from that to this (a distance of about 40 miles). Come up, all of you, and live with us, and let us buy your calicoes and cloths and blankets." "Impossible," was the reply. "We must have a station on the lake shore, where our steamers can call." "We will make a road for you," was the chief's reply, "and keep it open with our spears." And their disappointment was great when they found that Dr. Laws was unable to accept that generous offer. But does not this look like an ill-satisfied demand in that direction?

Again, when speaking with Archdeacon Maples, of the Universities Mission, on the east side of the lake, he told me of the efforts they had made to induce Sonjela, one of the two great Mangwangwara chiefs, to permit some of their number to reside with or near him. So far, however, they had been rebuffed, and with this reply: "Bring calico; we do not understand your tracts or your preaching, but bring calico, so that we may buy and clothe ourselves, then you may come." One could not help feeling that a concession to trade might have been helpful to the cause the mission had at heart, but the Universities men could not see their way to this, and had, for a time at least, to retire discomfited. But was not this another instance a proof of what I am telling you?

I will give you one more example of this demand. The Wam-Wamba, notwithstanding their superior qualities, are, from want of contact with Arabs and Europeans, perhaps the most absolute go-nakeds on the shores of the lake. When Capt. Elton and Dr. Laws first visited their country in 1877, and when we saw them ten years after, in 1887, a cutting from a banana leaf formed the most complete dress of a man, and a strip of fibre cloth some two inches wide the holiday garb of a woman. A party of us dwelt perforce in this country for six weeks last year, and being ourselves clothed and having with us a number of native servants, generally speaking also well covered, the passion for dress grew so fast with our hosts that before we left white calico had long ceased to satisfy them, and a fowl could only be bought for a strip of coloured cloth, or a yard of "Turkey red."

You will now no longer doubt that the demand exists, and it is, I say, a growing one, as regards in the quality as well as in the quantity of the goods asked for. If you want proof again of this, visit any mission or trading station in East Africa, and

you will see that the natives in its vicinity are far better clothed than those more remote from it. Nothing is more infectious or spreads more rapidly amongst the natives than the passion for dress—provided, of course, there is security for life, and there are given opportunities for gratifying it.

The next question you will naturally ask me, and upon my reply to it I am fully aware the degree of confidence with which I shall inspire you in the future prospects of this country will greatly depend, is: “What has the country to give in exchange for our manufactures? What are the present exports, and what the products that might be exported thence?”

First, then, and leading the list in importance, is ivory. To this most valuable of all exports—putting aside for the present any possible supply of minerals—trade must chiefly look for an immediate return on its capital. Perhaps there are no better elephant hunting fields in Central Africa than the great marshes of the Shiré river and on the western shore of Lake Nyassa. I have been astonished to find how little they are known by hunters who are satisfied to plod year after year with the slow and heavy bullock wagons (Selous gives us a dreadful instance of 28 miles got over in one by sheer hard dragging through sand and swamp in 40 days) through the Matabele and other countries south of the Zambezi, hunting fields that are venerable to the English sportsman, whose aim is large game. I do not mean to say, however, that the supply of ivory which we may look for from the Nyassa is wholly dependent upon that furnished by these fields. What I desire to point out is that the present supply may, and should be, largely increased, to the benefit of trade, the country, and the people generally. The Arab slave dealer is the chief collector of ivory in this country, with the tusks of which he loads his slaves, obtaining thereby cheap and profitable carriage to the coast. The British trader upon the Nyassa obtains but a fraction of the whole amount collected—just so much as the Arab chooses to part with to enable himself to renew his supply of barter-goods and to resume his collection in the interior. Whilst the operations of the British trader on the Nyassa are confined to his station on the shores of the lake, he plays the dignified *role* of a storekeeper to Arab traders, where they may renew their store and be relieved of a journey to the coast.

It should not be difficult to alter this. The collection must be undertaken and carried out by English agents, who should travel with large caravans in the interior districts west of the Nyassa, and get from the native chief, at first hand, the ivory he now waits for in his store on the shore of the lake. Much has been said of the check given to the slave trade by the taking up of the ivory, on the Nyassa, from the hands of the



Arab collector, thus obviating the necessity for slave carriage to the coast. But I am now convinced that a very slight blow is struck by this means at the slave trade. Little good will really be effected until the collection in the interior is also carried out by Englishmen, and the Arab trader is undersold, and thus peacefully ousted from the collecting field. The British trader has every advantage on his side. Water carriage should place his goods upon the Nyassa cheaper than they can be carried there overland by the Arabs, who have also to contend with the high percentage exacted from them for advances by the Indian trader of Zanzibar or Mozambique.

I can conceive few things pleasanter for a young and healthy Englishman, prepared, of course, to live in tent and on the simplest fare, than a journey of six months or a year in charge of such a caravan, travelling slowly through new country. And what delightful prospects it opens up for a young naturalist to accompany a caravan like this, where more time would be given him to accomplish good, thorough work, than he can hope to get in the usual style of African travel, almost always, more or less, a push. Some of our best African travellers—Schweinfurth, for example—have only succeeded in giving their thorough descriptions of country, and bringing home good natural history collections, by attaching themselves, for months and years, to Arab slave caravans, and utilising the leisure their slow locomotion and long delays afforded. How much better this would be done if the caravan were headed by your own countrymen!

But to return to our subject. Next in importance to ivory must be placed indiarubber, in which the country west of Nyassa, stretching towards Lake Bangweolo, is undeniably rich; but comparatively little is collected, as the natives know little of the value of the plant, and have never been taught to collect it. Its export might be indefinitely increased, I believe, by the same means I would like to see adopted for the extension of the ivory trade.

There are many other products indigenous to the country, but few of those known are able to bear the present cost of carriage to their markets. I doubt not that, when the country comes to be better traversed and scientifically examined, the number of more valuable products will be increased. How completely they may remain hidden until some chance brings them to light, I can instance by the case of *Strophanthus Kombe*, of which some specimens were sent by me to the Foreign Office in 1881, and thence to Kew. That variety turned out to have been previously analysed by Professor Fraser, of Edinburgh; but a demand for it, as a drug for heart disease, shortly after sprang up, and its existence in this country having been thus proved, I was able to start its collection in

the Shiré and Nyassa districts and in the Gaza country. The first consignments home proved to be so valuable to the collectors that soon a rush was made to collect it, and the natives were quickly taught to bring down the pods in large loads. In the same manner we may hope other valuable products will come to light, and more profitable exports found than the oil seeds which now form the staple articles of production on the coast and Lower Zambezi and Shiré rivers.

We must remember how slow and gradual has been the development of trade on the African coasts. When the British Indian traders, to whom, a little more than a century ago, the Portuguese Viceroy of India granted a monopoly of the trade of East Africa, arrived on the coast, trade was precisely in the condition we find it now in the interior. The native knew nothing of the collection of valuable products—knew not, indeed, of their existence until shown. Now, on the coast, and for 100 and 200 miles inland, they have learnt the demands of trade, and a regular collection is made by them of rubber, calumba, orchilla, and copal.

So far we have only spoken of the export of produce indigenous to this country. When Europeans, however, begin to settle in it—and in a small way this settlement has already begun—fresh sources of wealth are opened up, and other products, for which the climate and soil are found favourable, are cultivated, and their export forms a valuable adjunct to that of the natural products of the country. Coffee and sugar have already been raised with success, and wheat, tea, and chinchona are all undergoing trial. The coffee and sugar consumed at the mission stations is mostly home or Nyassa grown, and very good in flavour and strength I have found them. A later experiment is the introduction of Angora goats for the production of mohair.

We are now led to the next inquiry you will naturally make, and which is indeed inseparable from a consideration of the future prospects of the country, “How far are these districts suited for colonisation by men of our race? Do they contain, not mere isolated points, but large tracts where health may be preserved and outdoor work performed by Englishmen?” The experience of those who have lived in the country for years gives to this question a very favourable and encouraging reply. Given an altitude of from 3,000ft. to 5,000ft. above sea level, and you have in this country, which is sufficiently near to the coast to get the benefit of the monsoon winds and whose rainfall is not excessive, a climate in which a sound European constitution may retain all its vigour and power of work. I am not speaking at hazard on this point. Scotch and English men and women have now lived for years in perfect health on the high lands around Nyassa, east and west, north and south, for at all these points we have mission and trading stations. On the lake shore,



and on islands on the lake itself, they have also dwelt, but the heat of the lower altitude—1,600ft. only above sea level—makes the summer weather a little trying. Consul Hawes writes from the Consulate on the southern slope of Zomba, about 3,500ft. up, “The climate of Zomba is frigid in the winter months, and fires and blankets are very pleasant.” A huge wood fire crackling brightly in an immense fireplace was, I remember well, a most enjoyable reminder of home when I visited Blantyre in the winter months—June and July—of 1884.

It is almost impossible to speak to-day of any part of South Africa without reference to the possibility of its containing mineral wealth, so plentiful and widespread have been the “finds” of precious metal south of the Zambezi. No systematic search has yet been made in the Nyassa region, but I may say that gold has been found in some river beds on the western highlands. Whether this will prove to be in payable quantities I cannot pretend to say. It was first seen by Mr. Herbert Rhodes, a companion of Capt. Elton’s, on his last disastrous journey, and I hear it has been again met with by a member of the Free Church Mission of Scotland. To the north-east of the Portuguese settlement of Tete, on the Zambezi, gold has been collected for many years, and the range washed by those gold-bearing streams is of similar formation, and is, in fact, the same range as that which stretches to the northward, west of the Nyassa, on which gold has also been seen.

I think I have now put before you all that is known of the capabilities of the Nyassa region. Perhaps you will say that the majority of them are common to many mountainous districts of East and Central Africa. Granted, but I reply there is one great natural gift it possesses which is not—which is special, indeed, to the country under our notice. The healthy uplands surrounding the Nyassa are divided by the only navigable waterway to the coast in East Africa, and this alone naturally marks it out as one of the first districts of East Central Africa for European occupation. You have nothing like it in Bechuanaland, which we are gradually colonising, in spite of its many unattractive features, through the sheer momentum of the English advance from the South. No vestige of a navigable stream cuts our new acquisition in Masai-land, where, moreover, traders have literally to fight their way into immense armed caravans through a powerful and hostile people (see Thomson’s “Through the Masai Country”). To be able to step into a river steamer at a sea-port—as may be done now at the mouth of the Zambezi at Inhamissengo or Conceiças—and be carried up in five or six days to the fort of the Shiré highlands, within a day’s walk of our first settlements, is an immense step already gained. Without any wish to disparage the prospects of the other

countries I have named, it cannot fail to strike you that British Bechuanaland, or the "Slopes of Kilima-njaro," of which we have heard so much, are not to be approached with any such ease.

I am very desirous to avoid anything like a one-sided advocacy of this country, though I believe it to be superior in its capabilities to the latest outlying fields of British advance in Africa. But it is surely a right we owe to the public to place it in possession of the means to judge every country upon its own merits. That I may be held free from any charge of special pleading, I will now place before you "the reverse of the medal," and tell you fairly the great disadvantage under which this country labours, and the chief obstacle to its development by British hands.

It is to be reached by a navigable waterway from the coast—that I have told you is one of its chief advantages. The outlet of that waterway is in the hands of a foreign power—that I must now tell you is its great and chief disadvantage. You know, however, it is one that the history of South Africa has made familiar to us. The Transvaal and Orange Free States have both been locked up in the interior, by the interposition between them and the sea, of foreign colonies, who have held their only outlets for trade with the civilised world. For years they paid heavily for that misfortune. Then consumers have contributed towards the revenues of the maritime states, by the retention, on the part of the latter, of the full amount of customs dues levied on goods passing into the Inland States. The injustice of an exaction of this nature is now everywhere acknowledged, and in South Africa; Portugal, and the British Colonies of Natal and the Cape, refund, either by a very low transit duty or by a rebate to the inland states, all but a small contribution towards the cost of collection.

Is it hopeless to expect that Portugal will be equally just and generous to the interior foreign settlements upon the Nyassa? She has already acknowledged the justice of the request, in the concession for seven years—from 1877 to 1884—of a low transit duty of 3% on all goods passing the confluence of the Shiré and Zambezi for Nyassa. That liberal and just enactment was revoked in 1884, shortly after the so-called "Congo Treaty" (in which Portugal also consented to draw the boundary line, towards Nyassa, of her East African possessions at the Ruvo river) and was thrown out of the British Parliament. If this concession be regained and assured to us for a certain period of years, then the fact that the outlet of their waterways to the coast is in foreign hands becomes a matter of but slight importance to settlers on the Nyassa. But trade and capital will not venture where there is fiscal uncertainty and the British settler naturally



objects to being taxed, even indirectly, for the benefit of foreign pockets.

I wish I had time to tell you something of the slave trade in this portion of the East African coast, for the extinction of which a strong English settlement on the Nyassa would do very much. But I should far overstep the limits of a paper in your Journal, and perhaps also intrude matter foreign to a geographical society's magazine, if I were to dwell upon it. I will only tell you that evidence comes to us from all sides—from the interior, from the coast, and from Madagascar—to show that it has largely increased of late. No one who has had any opportunity of watching events in East Africa during the past three and four years will hesitate to connect this with the rising Arab ascendancy in the interior, and the terrible destruction that has been wrought in the countries of the Congo Free State and with the great slave raids made west of the Nyassa, chiefly amongst the Babisa, by Arabs who have established themselves in force in the Senga country. From the Albert Nyanza to Lake Bangweolo there arises the same loud and bitter cry, due, I unhesitatingly assert, to the progress westward of the destructive wave of Arab advance that has been impelled from the east coast. I frankly confess that it does me great good to hear that they have it not all their own way, and that, though very seldom, there are times when the oppressed are able to give them a check. Let me quote a few words from a letter of Dr. Laws, which I received a short time since. The Arabs had leagued themselves with the Awemba, and, proceeding on their usual plan of exciting tribal feuds, had made extensive raids on the Babisa, a large tribe east of Lake Bangweolo. The latter sought the aid of the Angoni, which was granted, and Dr. Laws thus describes the return attack:—

“The Angoni army was strengthened by the Bacenga and Babisa, many of whom were armed with guns. On reaching the chief stockade of the Awemba, and also a less important one, these latter shot down those guarding the entrances, and then the Angoni carried them by storm, gaining a complete victory. The Awemba chief was killed as he was being carried away in a machila. All were put to the sword. The Angoni wished to spare the women and children, but revenge for past wrongs would not allow the Babisa to hear of this, and so there must have been, I fear, dreadful slaughter. From captives the Angoni learned that a compact existed between the Arabs and the Awemba, whereby the latter were to proceed south along the Loangwa valley, whilst the Arabs were to execute a corresponding movement along the lake shore, taking possession of the same.” Does not this tale give a frightful proof of the passions roused and blood shed through the intrigues of Arab slave dealers in quest of their prey?

I am sometimes told that the British public now-a-days has ceased to interest itself in the African slave trade. Those who think this, look, I believe, not far below the surface of things. A subject that has moved the heart of England, at different but recent epochs, as deeply as that of the African slave trade, and that has stirred the mass of the people to such sacrifices as have been cheerfully made in the cause of its suppression, and has even stamped itself upon the policy of the country, does not lightly pass from the mind of a nation, though it may disappear for a time from the public press and the "topics of the day." It is latent, and lies not far below the surface, and bursts forth at times with unexpected and surprising force, as was shown by the outburst of feeling a few years back at the "slave trade circulars," documents apparently innocent enough, but which violated the attitude an English public considered a British man-of-war should take, when slaves bearing marks of ill-treatment sought refuge upon her, and, consequently, evoked an expression of feeling, strong enough to rend one to pieces, and make a satisfactory change in the other.

Were other subjects wanting, the slave trade alone would be enough to excite deep interest in General Africa. But a host of others have arisen, political, commercial, religious, and scientific, sufficient to spread over the civilised world the interest that was formerly felt by anti-slavery communities and philanthropic and geographical circles. In the new age that Africa has entered upon there is abundant room for all interests. And, in watching the working out of the new and powerful forces that are bearing down upon her from all sides, and in the conflict or amalgamation of these with the native races that now people the continent, there is an ample field for observation and study.

The great unoccupied continent of the world—or shall we say occupied only by races too feeble for recognition—has become a favourite field of European diplomacy, and foreign statesmen, dreading the illimitable expansion of what may be called the Anglo-Saxon period of the world's colonial history, are making feverish haste to seize upon the last portionable spaces of the globe to provide against the time when colonial enterprise in their countries shall be strong enough to call for independent and national fields for development. Every year shows some new appropriation—some fresh partition of the few portions of Africa on which Europe has not yet laid its grasp, and which are peopled only by Africans, whose voices are not heard in the "scramble." Had it not been for the neutralisation of the great heart of the continent by the construction, on the most broad and liberal economical principles of the Congo Free State, we should find that "scramble," which now shows some sign of abatement, continuing in the interior, and European



rivalries and intrigues would have been carried out into regions where representatives of every civilised power now work hand-in-hand for the country's good.

That great scheme which Stanley's genius evolved, and the philanthropy and wealth of the King of Belgium, aided by the power of Bismarck, brought into recognised being, was surely the happiest that could have been conceived for the real welfare of the native races of Central Africa. Hard knocks it has received in plenty in its infancy, and even encroachments from powerful neighbours; but in spite of all the greater part of the immense area of the African continent included within the basin of the Congo, it remains a "Free State," recognised by the majority of the civilised powers. In it the commerce of every nation has the freest play, undisturbed by any possibilities of protective tariffs, and free from all but the lightest fiscal burdens.

Shall we be able to say so much ten years hence of German East Africa—of the agglomeration of French colonies we see forming in the North-west—of Italian commercial policy, if she gains an over-ruling influence in Abyssinia—of the policy of the immense colony which Portugal is ambitious to form by the junction along the Zambezi basin of "Portuguese Africa, East and West"—or of that of Spain, if political events aid her in her desire for the acquisition of Morocco? Nay, let us look nearer home and ask—does the present policy of our own South African colonies give any promise of it in the confederation of South African States, which we hope to bring into being? Does not that policy threaten to be "union against the outside world," even if we are promised unrestricted trade between the States themselves? The resolutions passed at the late conference of delegates of South African colonies and states give their own unsatisfactory reply.

These speculations have led me apparently wide of my subject, but you will see that in truth it is not so. The future of no portion of the African continent can be correctly foreseen or discussed without a knowledge of the many forces at work in shaping the destiny of the whole.

NOTE ON THE PAPER.—In the paper on "The Nyassa Region of East Africa," read before the members of the Manchester Geographical Society last night, Mr. H. E. O'Neill showed effectively that the Zambezi question is well worth the interest which it has excited. Geographers, at least, will admit that there is no African explorer who can speak with greater authority on the region in question than the British Consul for the Portuguese East African possessions. It has often been urged by travellers of all nationalities that civilisation and trade must go hand-in-hand in Africa, and, as Mr. O'Neill makes clear, the truth of this proposition has been demonstrated in a quite remarkable manner on the Nyassa. For while the traders have evidenced their sense of duty to the natives and wise thought for the future by excluding from their list of imported commodities all spirituous liquors, the natives for their part have declared in the plainest terms that the exchange of local productions for Lancashire goods must be the basis of their intercourse with the white man. For such trade the Nyassa tribes are eager, and with very little encouragement

they are not only willing but able to defend it. Now it is perfectly clear that if trade is to be established there must be an adequate demand for imports and an equivalent supply of exports; and Mr. O'Neill hits the nail on the head when he says that explorers, anxious to awaken practical interest in Africa amongst English merchants, too often neglect to furnish sufficiently precise details on these points. In the Nyassa region not only are the chiefs eager to buy, but there is an abundant population; and north and west of the Nyassa, as well as south of the Zambezi, in Matabeleland, there are what may be spoken of as still untapped supplies of ivory and rubber. The extremely interesting discovery of the *Strophanthus*, a plant which has already assumed an important place in therapeutics, is only one example of the many miscellaneous products which await utilisation. The statement that there are indications of gold, not merely at Tete, on the southern bank of the Zambezi, but through the mountainous regions north of that river, will surprise no student of African geology. Then what is true more or less of the whole elevated interior of Africa is true of the Nyassa highlands—the country is fit for European colonisation. Coffee and sugar have already been successfully cultivated; wheat, tea, and cinchona are likely to prove equally successful; and certainly there seems no reason why the Angora goat should not thrive there. The solution of the great problem of trade with Central Africa—competition with the Arab, who, after employing the natives as beasts of burden, is able to sell them as slaves—Mr. O'Neill finds in water carriage. By the free navigation of the Zambezi and its tributaries, affording direct access either to the Great Lakes or to their vicinity, the European trader may be enabled to undersell the Arab and at the same time promote the cause of humanity. Mr. O'Neill's suggestion of European caravans as a means of reaching regions not directly accessible by water is the more worth attention as the plan has been to some extent adopted in the Egyptian Soudan. One difficulty remains—the claims of Portugal to the control of the Zambesi traffic. But the principle that a coast power cannot erect barriers at the mouth of a river affording access to countries beyond her sway is recognised on all the great rivers of the world; and Portugal herself admitted it with regard to the Congo at the Berlin Conference. Her claims in the present case have no justification either in international law or expediency, and from the point of view of the true interests of her own possessions they are suicidal.—*Manchester Guardian*, June 14, 1888.

**An Insect Fight.**—An observation quoted by Professor Morse in his address before the American Association last night is so exactly confirmed by a recent observation of my own, that it seems worth while to put it on record. While sitting in a hammock slung between two large maple-trees on the lawn, I heard a loud buzzing and fall of something behind me, and, looking around, I saw on the grass a locust (cicada) in the grasp of a large insect, evidently of the wasp family, but which I am not sufficiently well posted in entomology to name. It had brown wings, and large abdomen coloured black or dark brown with white spots. The whole length of the insect was about thirty-five or forty millimetres. When first seen, the struggling locust was on its back; the wasp extended above its head to head, and industriously plying its sting between the abdominal wings of the locust. The locust quickly became quiet, and then the wasp, maintaining its former position, which it did not at any time abandon, grasped the head of the locust by the middle pair of legs, and, using the other four legs for locomotion, started to drag it through the short grass toward one of the trees. There was no hesitation or uncertainty, but the wasp started at once in a straight line for the foot of the tree. On reaching the tree, the wasp began without pause to carry its burden up the trunk, using its four legs for walking, as before, and assisting itself to sustain the weight of the locust by putting its wings in operation. In this way, with a few brief pauses as if to rest and get better hold, in one of which it hung for a moment apparently by one leg, the locust was carried up among the branches of the maple, some twenty feet or so, where it became difficult for me to follow its motions. After reaching such a height, the wasp flew off in a straight line through the branches, and went out of sight. I think it carried the locust with it, but the height was so great that I could not be positive. At any rate, the locust did not fall to the ground, although, as the wasp's flight started from a crotch in a limb, it is possible that the locust was left in the crotch. The whole incident showed a perfect understanding, on the part of the wasp, of what he proposed to do, and the carrying out of a preconceived plan of procedure without any stopping to think what he would do next. The only pauses were in going up the trunk of the tree.—C. G. ROCKWOOD, Jun., New York, August 11, 1887.—*Science*.



## PROCEEDINGS OF THE SOCIETY

FROM JANUARY 1ST TO JUNE 30TH, 1888.

## FIFTY-SEVENTH MEETING

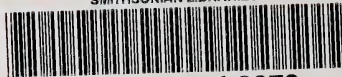
Of the Society, held at the Memorial Hall, Wednesday, January 11th, 1888, at eight o'clock p.m., Chevalier R. FROEHLICH, Vice-Consul for Italy (one of the members of the Council of the Society), in the chair.

Mr. ROBERT CAPPER, F.R.G.S., of Swansea, addressed the meeting on "Western Equatorial Africa." He traced the progress of discovery and commerce in that vast region. He said that the explorers, writers, and cartographers, to whose work-reference might be made upon African subjects, now numbered 3,300. He had himself travelled on the Niger and the Congo, and had spent some seven years in Africa, so that he was able to speak from personal knowledge. The country was endowed with the greatest resources, and only required the industry of man to develop them. Until recently the land had been almost impenetrable. Not one person in a million could realise the difficulty of travelling in the interior. The explorer required the endurance of a stoic, the meekness of a saint, and the constitution of a camel. Mr. Stanley was endowed with all these qualities, and courage in addition. The rumours now current respecting the fate of his expedition were not without precedent in the history of African travel. The rapid transit of ill news was proverbial. In Africa it would sometimes spread at the rate of fifty miles an hour. This was accomplished by means of the village drum, whose messages might be heard afar off, and repeated by another instrument. The climate of the central portions of the continent, lying within the eighth parallel on either side of the equator, he had found salubrious, and favourably comparable with that of India, China, or America. The most unsanitary district he had found was preferable to Panama as a residence for Europeans. He then touched upon the commercial history of the country. The sixteenth century had been the period of African companies chartered with exclusive privileges. But, in the absence of competition, there had been a want of enterprise, and, possibly owing to their share in the slave trade, few of the companies had prospered. In 1795 Mungo Park embarked upon his famous expedition up the Niger. This river and the Congo, which were then believed to be parts of the same water system, were pointed to by the finger of nature as the natural gates of Africa. The river Niger was largely worked by the Royal Niger Company, which was not a monopoly, which was English in its principles, and which sought to put down slavery. At one time there was an annual exportation of 100,000 slaves from the Congo. This had, of course, been changed. In January, 1875, the King of the Belgians came forward in the matter of the Congo, and nine months afterwards a conference was called, from which the International Association sprang. It was said that £400,000 had been spent in opening up this river. Means of communication were now the desideratum. They sometimes forgot that their own country was interlaced by canals. There were in England 4,000 miles of canals, and 400 miles of canal tunnelling, and canals were found to be a cheap and ready means of transport. Waterways and railways might connect the coast with the great lakes of the interior, and thus open out the continent. The route for a railway across the Sahara was indicated by the white line of skeletons which marked the route of the caravans. A slave caravan laden with two months'





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